ACUTE ULCERATIVE ENDOCARDITIS.

Thesis for the M.D. degree Edin: University

by - BYRES MOIR.M.B.

4 Leinster Square

London.W.

28th April 1891.

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Acute Ulcerative Endocarditis.

Since Dr Kirkes investigation of this disease in 1851 & 1852 fresh information has been steadily gained and the Gulstonian Lectures of Dr Osler, given in 1885 in which he summarised over 200 cases, added very largely to our knowledge of it.

As a definition I take that given by Dr Byrom Bramwell in his work on "Diseases of the Heart" (page 398).

"Acute Ulcerative Endocarditis - Synonyms. Septic Endocarditis. Infectious Endocarditis. Diptheritic Endocarditis. Endocarditis Maligna. Arterial Pyæmia, An acute inflammation of the Endocardium, which is characterised pathologically - by the formations of Fungoid Vegetations and (usually) ulcerations of the Endocardium; Clinically by great prostration, frequency of the pulse, Fever of an irregular or suppurative type, Symptoms of a typhoid or pyaemic character, together with enlargement of the Spleen, and the local manifestations of Embolic infarctions of various organs. The invariable termination so far as is at present known is in death.

Micrococci frequently abound in the Cardiac Vegetations".

To distinguish it from Simple Acute Endocarditis Dr Woodhead in his work on Practical Pathology gives the following points as distinctive of the Ulcerative Form.

(1) Local action more destructive.
(2) Fragments detached and carried into the circulation give rise to more rapid and wide spread mischief than do Emboli from the simple form.
(3) The naked eye vegetations tend to occur more indiscriminately over the Endocardial surfaces of the valves or the Heart walls and they tend more readily to break down and leave ulcerated patches.

In reviewing a number of cases one is struck with the various forms in which the disease presents itself both clinically and pathologically and a proper classification is much needed.

The first division would be into two classes -

(1) Those in which the Cardiac disease is only part of a general pyaemic process, and in which the emboli give rise to secondary abscesses.
(2) Those in which the Cardiac disease is a primary affection, or follows after old valve lesions - and the emboli give rise to simple infarcts.

The following clinical notes are of five cases which have come under my observation since 1887, and I regret very much that time has not permitted me to make any researches with regard to the pathology of the disease

and the positions which Micrococci hold with regard to its causation.

They all seem to be of a fairly typical nature, presenting fever of a pyaemic character, rapid pulse, enlargement of the spleen, vegetations of the endocardium with ulceration, and infarcts in various organs. They all terminated fatally, so the result of the Post Mortem examinations is given in each case. In not anyone of the five was it a part of a general pyaemia and they all come under the class known as "Cardiac cases". Four, out of the five, had previous valvular lesions and in only one could it be looked upon as a primary disease. Two cases had a distinct history of Acute Rheumatism, and in one there was a clear account of Rheumatism though not of an acute attack. In three Anæmia was a very marked feature when they came under observation, and I think that Anaemia must be looked upon as one of the factors causing it, especially when there are already present valve changes. Dr Goodhart in the Lancet, March 1880. drew attention to the danger from this condition showing that from the high tension of the pulse and the dilative changes in the left ventricle there was undue tension in the valves and strongly advised the active and early treatment of the anaemia.

Cases 3 and 5 seem to illustrate this well they were both children of the poorer class who when they came under notice were very anæmic and suffering from valve lesions and no other cause than the debilitated condition could be assigned as the starting point of the inflammatory process.

Case 4 was also in a very weak and anaemic condition and suffering from Cirrhosis of the Liver at the time of the attack.

With regard to the Theory that Micrococci are the cause of this disease, the suggestion given by Dr Bramwell in the work quoted above, (page 399) is very important - viz - "That although Micrococci may be present in simple Endocarditis it is only in weak and debilitated states that those little bodies thrive".

CASE I.

Acute Ulcerative Endocarditis and Endarteritis in a man of 21 without previous history of illness. First seen 15th September 1887 - Died October 22nd 1887.

Edwin Gooday. At 21. Porter.

Previous History; has always enjoyed good health. No history of Syphilis. Two months ago he slept in a damp bed and thinks he caught cold, since then has had a bad cough with considerable expectoration. Has lost much flesh and has perspired profusely at night. Was told by a Doctor that he had consumption.

Present Condition; A well-built man, somewhat emaciated. Weight 8 st. 5 lbs. Complains of great weakness, a troublesome cough, keeping him awake at night, expectoration of thick yellow phlegm - Perspirations. Tongue is clean. Appetite good and bowels regular.

Examination of Chest. Flattening in both infraclavicular regions. Expansion of rest of chest good. Slight dulness on percussion in front at right apex. Breath sounds normal. Posteriorly there is also dulness at right apex with feeble breath sounds. No moist sounds.

Heart. Apex beat ½ inch below and 2 inches to inner side of nipple. Area of dulness slightly increased. At apex the first sound is impure, at base systolic bruit over aortic area. Pulse 106, small and compressible.

Temperature on evening of 15th Sept. 102.4.

Urine. Amber coloured. Sp. Gr. 1020. Reaction alkaline, smell ammoniacal. Deposit of phosphates. No albumen or sugar.

In the following notes the chart gives the range of temperature, and also the pulse (when taken) morning and evening observations 8 a.m. and 8 p.m. The daily note not inserted except when of special interest.

Sept. 25th Up to this date there was not much change in his condition. Cough was at times troublesome. Appetite and sleep good. Perspired slightly at night. This morning the left instep was found to be red and swollen and there was marked tenderness to touch.

" 30th The swelling of instep has disappeared. Last night he had a distinct shivering fit, but the temperature did not rise. Bowels acted twice, stools very offensive. Complains of pain in left side in

Name Gooday Edwin Age 21. Disease Ulcerative Endocarditis & Endarteritis Result Death. Age Disease Result

Opposite page H

September	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
																	October																						
Pulse	106																		100	88	88	76	72	77					92		128	88	80	64	70	80			
Resp.																																						
Urine Oz:																																						
Reaction																																						
Sp: Gr:																																						
Albumen																																						
Sugar																																						
B.O																																						

1.30. a.m.

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CASE I. (continued)

lumbar region. Examination of chest shows slight dulness at right apex but no evidence of any breaking down.

Oct.3rd. Pain in left side has continued. Yesterday the Temperature rose to 103.2, in the evening, he slept well during the night. At five this morning he vomited and shortly after this became comatose. At 6.45 he was in a semi-comatose condition, was unable to answer any questions but did not seem to be in any pain. The pulse was very small and feet cold. Given brandy. Examination of lungs showed no change. The heart - There was a systolic bruit at the base, very loud, and could be heard all over the praecordia. Abdomen tympanitic and tender on pressure over the sigmoid flexure. No scybala could be felt. At 10.30 a.m. he was still in a semi-comatose condition, could take nourishment. The right pupil contracted and did not react to light; the right cornea was anaesthetic. Left pupil normal. Skin acting freely. Pulse 100 small and compressible and intermittent. Has lost power in right arm and leg and right side of tongue. There is evidently aphasia.

" 4th. Patient is quite conscious this morning - but still unable to answer questions. The right side of face and body is paralysed and right cornea anæsthetic. The muscles of left side of face constantly twitching. Vomited once yesterday. Urine passed involuntarily. Pulse 88 fairly full. Bowels have not acted. Examination of heart shows systolic bruit still present and rougher in character than yesterday.

" 5th. This morning patient can say No. There is no movement of the right side. Pupils are slightly dilated. Pulse 88 fairly full. Bruit at base still very loud. Fainter at apex.

" 6th. Slept well during the night. Takes nourishment well. No movement of the right side. Aphasia still present. Sordes in the mouth. Tongue dry and thickly coated. Bruit at base still marked, not heard at the apex. Pulse 76 regular.

" 10th. His condition much the same. Urine passed involuntarily. Bruit at base remains the same and there is also a systolic bruit at apex.

" 13th. Cornea of right eye sensitive. Aortic bruit the same, that at apex fainter.

" 21st. During the past few days the patient has remained about the same. Temperature and pulse have

CASE I (continued)

shown considerable variations. Urine still passed involuntarily. Bed-sores have formed on the hip and back. The right arm has become very rigid. Last night temperature rose to 103. And at 1.30 this morning it fell to 96.and patient became unconscious. At 6.30 there was a return of consciousness - but at 7 o'clock coma came on with stertorous breathing. Right arm and leg were in a condition of clonic spasms. The left side is perfectly rigid and it is impossible to bend the wrist and elbow joints. Pupils are contracted and equal, both corneæ anaesthetic. The eyeballs turned to the right. Hyperaethesia of the whole body. Pulse 168 very small. Respirations 40.Temperature 98.6. Heart sounds very rapid,both sounds much roughened both at apex and base. Cheyne-Stokes respiration came on and the patient sank at 11.25 p.m. on the 22nd.
Temperature just before death was 107.

POST MORTEM NOTES.

There were old pleuritic adhesions on both sides, but beyond hypostatic congestion,the lungs showed no trace of disease.

Heart. Left ventricle was much hypertrophied. Mitral-pulmonary and Tricuspid valves were healthy. One of the Aortic valves was roughened and a small but well marked ulcer found on it.
The Aorta,for about two inches above the valves, was much dilated. The tunica interna was ulcerated in several places on the posterior wall of the vessel, the ulcers being about the size of a three-penny piece.
Between the inner and outer coat was a large clot of blood which had become partly organised - it was about an inch in length,and about ½ an inch in breadth,and in places was breaking down. A part of the clot projected through the ulcerated portions of the coat for about an eighth of an inch into the lumen of the vessel. The projecting parts were roughened and softened. On the anterior aspect were two large atheromatous patches.

Brain. The membranes were adherent to the upper surface of the brain and there was marked increase of vascularity of brain and membranes. In the left hemisphere a little posterior to the 3rd frontal convolution,was a large broken down area - three quarter inch in length and three and half inch

CASE I (continued)

in breadth, extending from the corpus striatum to within ½ an inch of the surface of the brain, in the middle of this area was a small branch of the middle cerebral containing a plug.

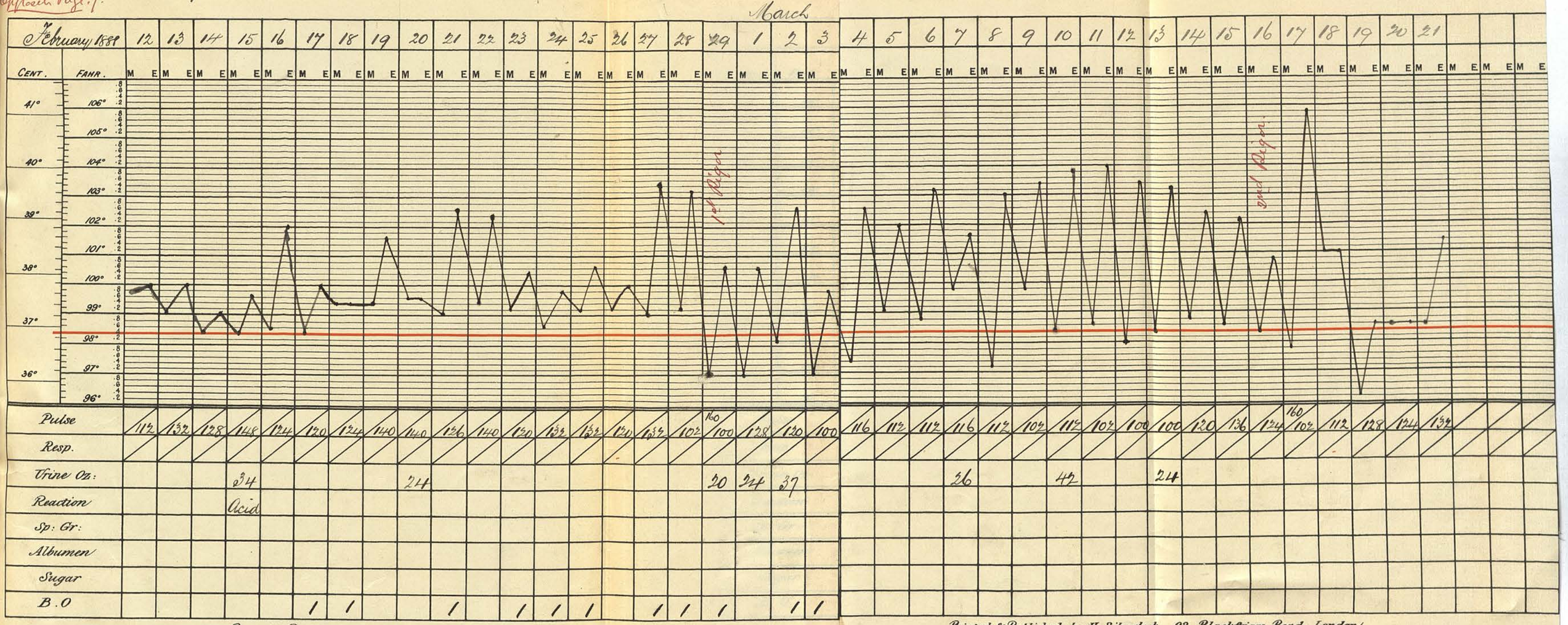
Spleen. Enlarged, on the surface and extending into the tissue for about an inch were two light brown infarcts.

Kidneys. No infarcts were found.

Name Samuel Langford Age 30 Disease Acute Ulcerative Endocarditis Result Death

Age Disease Result

Offsheets Page 7.



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CASE II.

Acute Ulcerative Endocarditis in a man of 30.
History of Rheumatic fever eleven years previously, leaving Heart Disease.
First seen 11th Feb.1888. Died March 22nd 1888.

Samuel Langford. Builder. At 30.

Family History. Father died of Asthma. Mother alive strong and healthy. No brothers or sisters affected with rheumatism.

Previous History. Eleven years ago had Rheumatic fever laid up for three months. No other serious illness. States that he was in good health till a month ago when he caught cold. The wrists became painful and also the right leg; was not obliged to keep to his bed, but has been getting up every day.

Present Condition. Complains of pain in the right leg - The muscles of the thigh were very tender to the touch - No joints affected. Temperature 100. Pulse 132 full and thumping. Tongue coated with a white fur. Appetite bad. Bowels confined. Flatulence.

Examination of Chest. Lungs normal.

Heart. Area of dulness increased.
The apex beat is diffuse and thumping, 2½ inches below and in the nipple line.
At Apex - Presystolic, systolic and diastolic bruits.
At base - Aortic systolic and diastolic - the bruit replacing the 1st sound being very rough and blowing. A pericardial friction sound is heard occasionally at the base.

Urine. Sp.Gravity 1020. Alkaline. No albumen or sugar.
Deposits of triple phosphates and urate of Ammonia.

March 1st. Up to this date there was no marked change in the condition, though the temperature had several times been over 102 and twice over 103. The pulse had been very rapid varying from 112 to 160. Last night the patient had a rigor which lasted about ten minutes - it was very severe - felt no pain. Pulse 120.
This morning he perspired profusely, there was very little sleep during the night. Left ankle is very painful though there is no swelling, there is also some tenderness over the instep. Examination of heart shows area of dulness not increased. A loud double friction murmur to be heard over the praecordia, and it is especially loud in mitral and aortic areas.

" 7th. The friction sounds have now disappeared, the foot is still painful, and he has occasionally been wandering in the night.

CASE II (continued)

March 9th. Complains of pain in swallowing and about right angle of lower jaw from Tonsillitis.

" 17th. At 8.30 last night, had a severe rigor which lasted 20 minutes. About a quarter of an hour before the rigor came on the left leg and foot became numb, with feeling of pins and needles, and both feet were very cold, after the rigor he broke out into a profuse perspiration and the left foot became burning hot.
This morning the foot is very painful and is quite cold to the touch. Mouth and tongue very dry. Pulse exceedingly small in the left radial, at the right radial is 160. Heart's action very rapid, sounds muffled - and bruits obscured by marked friction sound at base.

" 18th. The temperature last night rose to 105.8. This morning it is 101, Pulse 112. All last night the left foot was tingling and cold, the right one warm and perspiring. No pulsation can be felt in the left posterior tibial artery and the foot and leg as high as the calf are painful. Surface temperature of left foot is 80. that of the right foot 90. In the left popliteal space a cord-like swelling can be felt, hard and tender to the touch, its direction is that of the popliteal artery. Friction still heard on the cardiac area.

" 19th. Temperature this morning is 96.2. Patient was very weak all night and scarcely slept, in early morning he had two severe attacks of dyspnoea during which he was cyanosed, rattling of mucus in the trachea, and expectoration of some blood-stained mucus. Coarse crepitations can be heard all over both lungs, more especially at the left apex. Pulse very feeble on left side, can be felt distinctly on the right. Heart sounds are masked by the noisy respiration. Left pupil contracted. Pulsations can be felt readily in the left femoral, but not in the left popliteal.

" 20th. Temperature was 98.6. last night, and the same this morning. Pulse 124 full and fairly regular in the right wrist. During the night wandered very much, and this morning he calls things by the wrong name, though he appears to know what he wants. Bowels have acted once involuntarily. The left foot is becoming very dusky in hue, under the calf there is a large ecchymosis. The breathing is easier though there are occasional paroxysms of dyspnoea.

CASE II (continued)

Examination of lungs - at left apex as low as 2nd intercostal space, there is dulness and loud coarse crepitation at the end of inspiration. Crepitation not so marked over rest of lungs as yesterday. A double friction murmur is still heard at apex of heart, at the base there is a loud blowing bruit slightly to the right of sternum, in the 1st and 2nd intercostal spaces.

March 21st. Temperature still keeps down. Pulse 132. Was very drowsy all day yesterday, and during the night unconscious at intervals. Occasional paroxysms of dyspnoea. The right hand is quite cold and cyanosed. Surface temperature 84. The left is natural in colour, surface temperature 100. Left foot still very dusky and extremely tender to the touch. Right foot is becoming cyanosed about the great toe. Heart and lungs remain the same. Pupils contracted and do not react to light. Patient sank at 4.15 a.m. on the 22nd of March.

POST MORTEM NOTES.

Thorax, on removing the sternum with the costal cartilages the heart was found to extend about two inches to the right side, the edge of the left lung was invisible.

Lungs -very firm pleuritic adhesions on both sides, quantity of fluid in pleural cavities. Hypostatic congestion of both lungs. No infarcts could be discovered.

Heart - Pericardium firmly adherent throughout its whole extent, had to be dissected off. There was some recent lymph about the Aorta and right auricle. The organ was very much hypertrophied weighing 27½ oz. Right auricle much dilated. Tricuspid valves studded with minute vegetations, as well as some ulceration of the segments. Pulmonary valves were fairly healthy.

Mitral Valves - on anterior flap was a large mass of vegetations about the size of a small walnut, extending into the auricle, no ulceration detected.

Aortic Valves - were also studded with vegetations and in several places presented small ulcers. There were some small patches of Atheroma in the aorta, innominate, and left carotid arteries.

Liver - much enlarged.

Spleen - enlarged and showed a large number of infarcts, the tissue about some of these had broken down and formed large abscesses.

CASE II (continued)
Kidneys - No infarcts.
Brain - not examined.

Name Ada Yeoman Age 17 yrs Disease Ulcerative Endocarditis Result Death Age Disease

Opposite Page 11

Septbr

August	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CENT. / FAHR.	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E
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37° 98°																																		
97°																																		
36° 96°																																		
Pulse			12	180							108			114						132										120				14
Resp.																																		
Urine Oz:													34																					
Reaction	acid																																	
Sp: Gr:	1015												1010																					
Albumen	None												Trace																					
Sugar																																		
B.O													2		1		3		1					2									2	

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Result Age Disease Result

Oct 6th

29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
E M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E
		144				144	150	182	140	150	140	138				132							144		132		120			
	2	3	3	4			2					1				1														

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CASE III.

Acute Ulcerative Endocarditis in an Anaemic girl of 17. Previous History of Rheumatism, but not acute. Symptoms pointed to Heart disease. First seen Aug, 28th 1888. Died October 27th 1888.

Ada Yeoman Æt 17.

Family History. Father died of Bright's disease, apart from that good.

Previous History, up to 13 years of age was healthy - about this time was nearly run over, receiving a great fright. She was in bed for six weeks after this, and has never been well since, having gradually lost flesh. At various times had pains about body attributed to Rheumatism, but had no distinct attack of rheumatic fever. She suffers from shortness of breath and præcordial pain.

Present Condition very emaciated and anaemic. Skin of face, forehead and eyelids, yellow and deeply pigmented. Skin over rest of body is dry and rough. Over chest and abdomen some white scars are to be seen. Temperature 101. Pulse 120.

Examination of Chest. Heart's apex beat in the 5th space, quarter inch outside nipple line. Area of dulness increased - A loud blowing systolic murmur at apex conducted into the axilla. 2nd sound normal.

Lungs diminished note over both lungs.

Left, some crepitus at apex, mucus rales over the rest of the lung. At base in axillary line friction rub.

Right, free from moist sounds.

Liver extends to 1½ inches below ribs in anterior axillary line. No spots of roseola on abdomen.

Urine 1015. Acid, no albumen.

Sept. 9th. Since last note patient has complained of pain in left side of thorax and left hip. Has slept well. Tongue covered with dirty white fur, sordes on teeth and breath very offensive. Bowels have acted regularly. Temperature on the 6th ran up to 104.6. Pulse always over 100.

" 14th There has been a steady evening rise of temperature reaching 103. This morning there is some dulness at right base posteriorly, absence of respiratory sounds and an occasional rub. Systolic murmur varies, but is usually very rough. Complains of pain in right side on coughing.

Urine 1010 a trace of albumen.

" 22nd Temperature still shows considerable variation. Cough very troublesome. Over the base of left

CASE III (continued)

lung behind from angle of scapula there is comparative dulness, with pleuritic rubs. Vocal resonance absent.

Oct. 2nd Temperature for the first time has fallen to normal. Pulse 144. full, easily compressible. Has had some diarrhoea.

" 15th Variation of temperature has continued with very rapid pulse. Herpetic eruption on upper lip. No change in the heart sounds. Frequent headaches and diarrhoea continues.

" 16th Body and joints generally examined but nothing fresh detected. No alteration in heart sounds.

" 26th Yesterday the temperature fell to 96. and patient is very feeble. Chest examined - Lungs gave a resonant note all over, with harsh breath sounds. Heart the same. Pulse 120.
Patient died on the 27th October.

POST MORTEM NOTES.

After removal of chest wall -Pericardium was found distended with a large quantity of clear pale straw coloured fluid.

Heart greatly enlarged weighing 16 oz. Firm decolourized clots found in all the cavities. Mitral valves were extensively diseased - large bunches of vegetations springing from them, with marked ulceration. The Flaps of the Tricuspid valves were thickened and pointed. Aortic valves - one of the segments was perforated.

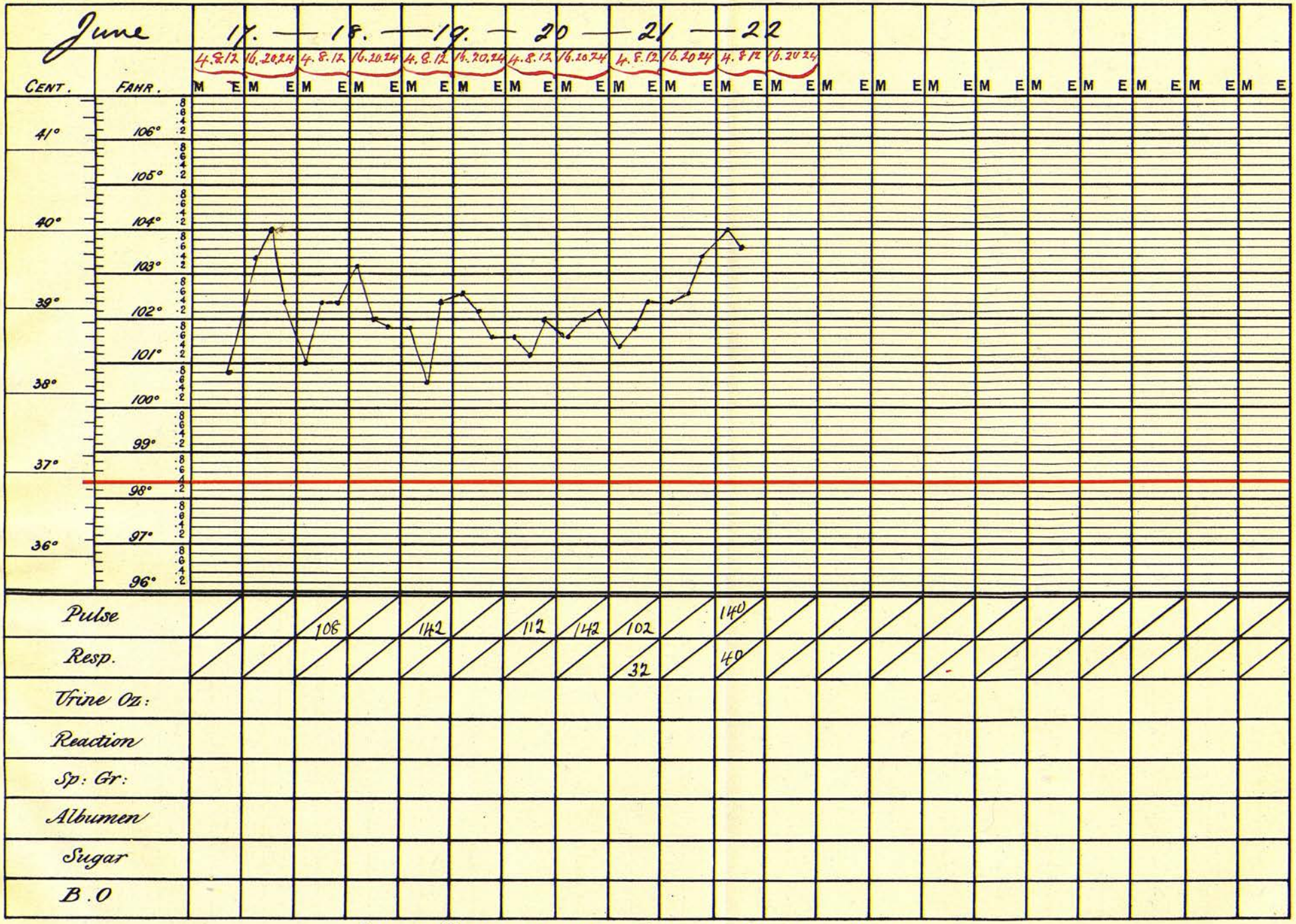
Spleen enlarged, 4 or 5 old infarcts, one as large as a walnut completely decolourized. One was apparently recent.

Kidneys both contained infarcts.

Brain not examined.

Name Jesse Clerk Age 57. Disease Result

Opposite P. 13.



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CASE IV

Acute Ulcerative Endocarditis in a man aged 57 while under treatment for Cirrhosis of the Liver, and Cardiac Disease.
First seen May 9th 1889. Died June 22nd 1889.

Jesse Cherk. At 57. Laundry work. Born in America, had a bullet wound in tibia.
No family history of importance.

Previous History No serious illnesses. Moderate drinker according to his own account. Enjoyed good health till June of last year, in that month was butted in the abdomen by a man, beyond a severe shaking did not feel any direct injury but he thinks that the present illness dates from it. About six weeks after the occurrence suddenly vomited about 1½ pints of blood. Second attack of haematemesis about three months ago, when he vomited about a pint, and has had two since, on all these occasions he passed blood with his motions. About three days after the last attack the feet and legs began to swell, the swelling gradually spread to the abdomen and shortness of breath quickly supervened. Has lost flesh considerably since the beginning of the illness.

Present Condition Extremely anaemic. Icteric tint of skin and conjunctivæ well marked. Legs and ankles swollen and pit on pressure, swelling extends up into the integuments of the abdomen, and there is fluid in the abdominal cavity. Measures 46 and a quarter inches round the abdomen. Dulness in the flanks, tympanitic in front. Owing to the distension the liver cannot be felt. Chest is barrel-shaped. Emphysema in front.
Heart - Area of dulness enlarged to the left. Apex beat faintly felt in the 5th interspace - double bruit at the apex and a loud systolic murmur at the base transmitted from the apex. Pulse 96 regular.
Urine 1020 Acid. No albumen but bile pigments.

May 30th Since above notes, has had two slight attacks of haematemesis. Paracentesis of abdomen, 16 pints of fluid drawn off, which gave great relief. Abdomen measured 38 inches after tapping. There has been no rise in temperature.

June 18th Up to yesterday there had been a steady improvement. Œdema had nearly disappeared from legs, patient was eating and sleeping well and allowed to be out. Yesterday morning was out for ½ an hour, about an hour after returning (2.30 p.m.) he complained of chill-

CASE IV (continued)

iness and a well marked rigor occurred which lasted till 3.45 p.m. at which time the temperature was 100.8. At 5 p.m. 103.4. and at 8 p.m. 104. Perspired very profusely and only complained of headache. No vomiting.

This morning the patient is very drowsy. Temperature 102.4. Pulse 108. Skin is hot and dry. No increase of the jaundice. Tenderness in epigastric region with marked tympanitic distension. No change in the heart sounds to be detected.

June 19th No return of the rigor. Temperature given in chart. Very restless all night. Still has headache and tenderness in epigastrium. Dyspnaea at intervals. Bowels acted once voluntarily.

" 20th Passed a restless night, delirious, complained of pain in left lower part of chest in front. Pulse 112 last night, 142 this morning.

" 21st Delirious all night. Temperature rose to 104. Urine and stools passed involuntarily.

" 22nd Quite conscious during the night, twitching of right arm was noticed at 7.30 this morning, well marked facial paralysis, with anaesthesia of left cornea, and probably of left arm as it drops when raised, while right is held up for a few moments and then slowly lowered. Paralysis of left leg uncertain. Both knee jerks absent. No ankle clonus. Pulse 140. Respirations 40. Great distension of abdomen. Died comatose at 3.30 p.m.

POST MORTEM NOTES.

Thorax - Marked Emphysema of lungs. Old firm adhesions on the right side, and lung firmly bound down to the diaphragm. Hypostatic congestion and Œdema. No infarcts.

Heart - No fluid in pericardium. Large patch of fibroid induration on anterior surface of left ventricle. Right ventricle contracted, small amount of clot in right auricle. Pulmonary and Tricuspid valve healthy. Mitral valve, edges of flaps considerably thickened. On one of the Chordae Tendineae attached to the posterior flap was a quantity of rough firmly adherent lymph, extending up behind the flap and at the corner of the junction of the flap to the heart wall was a small shallow ulcer. There was another similar patch of roughened lymph, firmly adherent to the anterior segment of the valve, there was no ulceration of this segment.

Aortic valves were in parts thickened by depositions

CASE IV (continued)

of calcareous matter but were not ulcerated. Signs of fatty degenerations of the interior of the first part of the arch of the Aorta. Calcareous degenerations of the coronary arteries.

Abdomen contained a large quantity of fluid.

Stomach walls were thin and showed several ecchymoses; two patches larger than the rest where recent haemorrhages had taken place.

Liver weighed 42 oz. in advanced stage of cirrhosis, of a well marked hob-nail character.

Spleen 29 oz. greatly enlarged. Capsule thickened, in parts one eighth of an inch thick. No infarcts. Substance softer than natural.

Kidneys larger than natural. No infarcts.

Brain Veins of meninges were considerably distended and a small amount of greenish lymph found beneath the arachnoid on the Convexity. Left ventricle was full of blood clot; which was evidently in parts undergoing absorptions. Walls of ventricles were ragged and stained with blood pigments. The Caudate Nucleus and Optic Thalamus were completely destroyed, internal capsule being intact.

Right side Lateral ventricle normal. There was a small haemorrhage in the anterior third of the anterior limb of the internal capsule. No other haemorrhages were found.

Name Janet Watkins Age 14 years Disease Acute Ulcerative Endocarditis Result

Opposite Page. 16.

July

June	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Pulse			112	100/108		128	108	110/110		116	109		96/88	112/116	102	
Resp.			36	34		36	34	32/42		36	32		40/36	36		
Urine Oz:																
Reaction																
Sp: Gr:																
Albumen																
Sugar																
B.O	2	1	1		1			1	1		1	1	1		1	1	

After this date the temperature was subnormal

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CASE V

Acute Ulcerative Endocarditis in a girl of 13, previous history of Rheumatic Fever and Heart Disease. First seen June 26th 1889. Died Jan.7th 1890.

Janet Watkins At 13.

Family History Parents healthy. One brother had Phthisis.

Previous History Fairly well up to three years ago then had an attack of acute Rheumatism. Twelve months ago had a second attack, and since then has suffered from weakness, shortness of breath on exertion and palpitation. These symptoms have been more severe since May.

Present Condition Very anæmic, with marked dyspnaea. Clubbing of finger-tips.

Heart beating in a tumultuous and irregular manner. Apex beat 7th interspace just external to nipple line. The interspaces drawn in during systole. Marked thrill to be felt over the apex. Dulness extends to right edge of sternum, upwards to the 2nd rib, and in the 5th left interspace 2½ inches from left sternal edge. On Auscultation at the Apex a loud to and fro murmur was heard conducted into the axilla & up to the base. At the base - a well marked soft systolic bruit and a much rougher diastolic bruit which was heard also at the back between the scapulæ. Over the costal cartilages of the 4th right rib was a soft bruit conducted downwards along the right edge of the Sternum. There is no enlargement of the liver.

No swelling of the feet or ankles.

Urine free from albumen.

Has no pain in the joints.

June 30th Temperature has not risen since first seen above normal, but last night suddenly rose to 103.4. without rigor. This morning is 99.4. Has no pain and general condition is much the same.

August 31st Since the last note the course of the temperature as shown in the chart is the chief thing to note. The pulse was rapid varying from 80 to over 100, several times very feeble and flickering. She had no pains, slight cough without expectoration. No headache. Appetite was fair. Slept well. On the 16th the temperature fell to 96. but the general condition of patient improved and continued up to this date. Patient was able to be up and walk about and anaemia was not nearly so marked. Palpitation was much less. All the bruits with the

CASE V (continued)

exception of the systolic at the apex were less marked, and treatment was discontinued.
The patient came under observation again on Dec.17th 1889. She was then complaining of the same heart symptoms as before, there was urgent dyspnæa and troublesome cough. Blood and albumen were both present in the Urine.

Dec.18th There is well marked Œdema of the left arm and hand as high as the elbow. No enlarged veins can be felt. The abdomen and legs are slightly Œdematous. Otherwise remains about the same.
Evening temperature 100.4. Morning 98.

" 23rd The œdema of the abdomen and legs has increased The arm remains about the same. The pulse is very small and irregular, and there is urgent dyspnæa especially at night, cough troublesome with a large amount of mucus expectoration. Temperature has not been above 100. since last note. Urine still contains blood.

" 28th Much worse in every way. Blood in the expectoration. Purpuric spots present over the left elbow and on the left cheek. Pulse extremely irregular. Patient got weaker and died on the 7th January 1890.

POST MORTEM NOTES.

Both pleural cavities were full of brownish serous fluid which did not contain any flakes of lymph.
Percardial sac also contained same fluid.
Abdominal cavity was full of brown serum.
Stomach and intestines not examined.

Lungs - both organs heavier than natural. Left sixteen and three quarter oz. Right eighteen and a quarter oz. Much engorged with blood and firmer than natural. On pressure serous fluid exuded. Crepitated all over with the exception of a wedge-shaped piece of the posterior surface of lowest lobe of right lung, which presented the usual characters of a medium sized infarct undergoing organisation.

Heart - Weighed 16½ oz. Increase of bulk chiefly due to enlargement of the right ventricle - but both auricles and also left ventricle were enlarged.

Tricuspid Valve admitted three finger-tips, was evidently incompetent. No vegetations on it, but one of its segments presented a curious oedematous appearance of a bluish red colour along its free border.
Right ventricle contained post mortem clot and also some ante mortem clot firmly adherent. The walls

CASE V (continued)

were thinned and the cavity enlarged by dilatation.

Pulmonary Valves - were healthy.

Left auricle dilated and empty.

Mitral Valve - admitted two finger-tips. On the endocardial surface of the posterior wall of the left auricle was an oval cicatrix about one and a half by three quarter inch in size, the auricular wall beneath it was thicker and firmer than natural. No actual ulceration present. This cicatrix did not extend on to the valve segment but stopped short at the junction of the valve and heart wall. The free edges of the valve segments were thickened and nodular forming a firm ring.

Left Ventricle hypertrophied and dilated.

Aortic Valves each segment had a thickened and contracted edge on which small tufts of roughened vegetations were present.

Kidneys No infarcts engorged with blood. Capsule stripped off readily.

Spleen enlarged seven and three quarter oz. Substance softer than natural. One medium sized infarct at lower angle, causing puckering of the surface. Another infarct in the same condition only smaller was found at the hilus.

Liver enlarged. Nutmeg in character.

Brain. not examined.

SUMMARY OF CASES.

Case I. is of great interest occurring in a young man of 21, of previous good health and without history of Syphilis.
Only slight ulceration was found on the Aortic valves, and the whole severity of the disease fell upon the first part of the Aorta, and it is really a case of Acute Ulcerative Endarteritis, in which an aneurism had formed from perforation of the inner coat. Dr Osler in his paper mentions a somewhat similar case in a man of 30, who had suffered from Syphilis and also Aortic incompetency, but in the case given above it seemed to be quite a primary condition for which no cause could be assigned. Emboli occurred in the brain and spleen.

Case II. Man aged 30. Grave heart trouble previously, is a very typical case - when first seen was apparently an ordinary case of Subacute rheumatism, then rigors occurred and temperature became of a marked pyaemic character rising to 105.8. shortly before death. Aortic, Mitral and Tricuspid valves were all extremely diseased. Numerous Emboli occurred.

Case III. Girl 17. Previous history of ill-health for some time with heart trouble. No marked symptoms except temperature which varied from 99. to 104. and a rapid pulse usually over 120. Lingered on for two months. Pleurisy came on in the course of it. Mitral valves extensively diseased, and one of the Aortic segments perforated. Infarcts in spleen.

Case IV. Man at 57. Previous heart trouble; while under treatment for this and Cirrhosis of the Liver had a rigor, temperature rose to 104. and he sank in four days with symptoms of Cerebral haemorrhage. Mitral valve showed small ulcer and a large amount of rough firmly adherent lymph. Haemorrhages into brain and stomach. Spleen enlarged, but no infarcts in it.

Case V. Girl at 13. Came under treatment for severe heart trouble. Temperature for 16 days varied from normal to 104.2. After that it was subnormal and case was not seen from August 31st till December 17th, and she then sank from heart failure. Purpuric spots were present on elbow and cheek. Infarcts found in lungs and spleen. Aortic valves were much

SUMMARY OF CASES (continued)

diseased and covered with vegetations. Mitral valves thickened and nodular. Tricuspid valve presented a bluish œdematus appearance as if it was the commencement of an inflammatory process.
On the posterior wall of left auricle an oval cicatrix was found which pointed to previous ulceration. Dr Bramwell points out the liability of this portion of the auricle to inflammatory action from the regurgitant current of blood impinging upon it.
Dr Osler says " I have known the febrile symptoms subside for weeks, to recur again with increased severity and there are cases which render it probable that the process may subside entirely".
In this case a period of $3\frac{1}{2}$ months occurred between the acute attack, of which the chart is given, and the final illness, in which the febrile symptoms were not marked.